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S/190/60/002/010/007/026
B004/B054

AUTHORS: Yegorova, Yu. V., Korshak, V. V., Lebedev, N. N.

TITLE: Heterochain Polymers. XXIX. Some Rules Governing the Interfacial Polycondensation of Acid Dichlorides With Hydroquinone

PERIODICAL: Vysokomolekulyarnyye soyedineniya, 1960, Vol. 2, No. 10, pp. 1475-1480

TEXT: The authors studied the interfacial polycondensation of adipyl dichloride and terephthalyl dichloride with hydroqinone. The acid chlorides were dissolved in toluene, the hydroquinone in alkaline water, and the two solutions were thoroughly mixed. The reaction with adipyl dichloride proceeded so fast that no chlorine was detected in the organic phase after 2-3 min. With terephthalyl dichloride, the yield was determined as a function of the reaction time (Fig. 1). Further, the effect of temperature was determined for this reaction; a maximum was found at 45°C (Fig. 2). The concentration of components has little effect on the yield. 0.5-1.0 moles/l is indicated as optimum value. Fig. 3 shows that the yield is much dependent on the NaOH concentration. The optimum concentration of

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Heterochain Polymers. XXIX. Some Rules Governing the Interfacial Polycondensation of Acid Dichlorides With Hydroquinone

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the alkali does not correspond to the concentration equivalent to hydroquinone (1:2), but it lies for adipyl chloride at an excess of 1 mole/l, for terephthalyl dichloride at an excess of 0.5 mole/l. The maximum intrinsic viscosity lies at the same alkali concentrations at which the maximum yield is obtained. Further, the authors determined the yield as a function of the ratio of the two components (Figs. 4, 5). A maximum yield of 45% was obtained from adipyl dichloride at 60% hydroquinone excess, and a yield of 85% was obtained from terephthalyl dichloride. An attempt at producing a polymer from methyl phosphinyl chloride and hydroquinone in the same manner was unsuccessful. The authors discuss the experimental data and explain them by a competition of the reaction of chlorides and polymer molecules among one another, and with hydroxyl- and phenolate ions, where the reactivity of the chloride, the concentration, and kinetic factors are of importance. A paper by V. V. Korshak, S. V. Vinogradova, and A. S. Lebedeva is mentioned. There are 5 figures and 3 references: 2 Soviet and 1 US.

ASSOCIATION: Institut elementoorganicheskikh soyedineniy AN SSSR (Institute of Elemental-organic Compounds of the AS USSR)

SUBMITTED: April 12, 1960

Card 2/2

L 00829-67 EWT(m)/EWP(j)/T IJP(c) WW/JAJ/RM

ACC NR: AP6027769 (A) SOURCE CODE: UR/0190/66/008/008/1365/1367

AUTHOR: Korshak, V. V.; Mozgova, K. K.; Yegorova, Yu. V.; Gumargaliyeva, K. Z.; Belavtseva, Ye. M.

ORG: Institute of Organoelemental Compounds, AN SSSR (Institut elementoorganicheskikh soyedineniy AN SSSR)

38 3 n B

TITLE: Electron-microscope investigation of pemosores

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 8, no. 8, 1966, 1365-1367

TOPIC TAGS: monomer, graft copolymer, pemosore

ABSTRACT: The structure of multigraft copolymer pemosores was studied. The analysis of grafted films of polyethyleneterephtalate and poly-ε-caproamide with different vinyl monomers was done using carbon-platinum replicas in the UEMV-1000 electron microscope. The graft changes the morphology of the surface structure considerably, whereupon the changes grow with the increase of quantity of the grafted monomer. A difference in the character of grafting was also found in the case of polyethyleneterephtalate and poly-ε-caproamide with different grafted monomers.

Card 1/2 UDC: 678.01:53

L 00829-67

ACC NR: AP6027769

The author thanks D. Ya. Tsvankin for taking x-ray photographs of pemosor samples. Orig. art. has: 8 figures. [Based on authors' abstract] [NT]

SUB CODE: 07/ SUBM DATE: 30Jun65/ ORIG REF: 002/ OTH REF: 001

Card 2/2 hs

L 01265-67 EWT(m)/EWP(j)/T IJP(c) WW/RM
ACC NR: AP6003493 (A) SOURCE CODE: UR/0020/66/166/001/0118/0121

AUTHOR: Lokshin, B. V.; Mozgova, K. K.; Korshak, V. V. (Corresponding member AN SSSR); Yegorova, Yu. V.

51
B

ORG: Institute of Elementoorganic Compounds, AN SSSR (Institut elementoorganicheskikh soyedineniy AN SSSR)

TITLE: Graft copolymers. Mechanism of grafting polyethyleneterephthalate (Lavsan)

15

SOURCE: AN SSSR. Doklady, v. 166, no. 1, 1966, 118-121

TOPIC TAGS: graft copolymer, thermal decomposition, polyethylene terephthalate

ABSTRACT: The mechanism of grafting of polymers is discussed. It is concluded that the thermal activation of the process of grafting of a Lavsan film is related to its thermooxidational destruction. Heating of a Lavsan film at 110C for 6 min caused the appearance of new infrared absorption bands at 670, 720, 810, 920, 1620, and 1840 cm^{-1}. These changes were due to the formation of hydroxyperoxide, anhydride, and vinyl groups in the process of the thermooxidational destruction. Orig. art. has: 2 fig.

SUB CODE: 07/ SUBM DATE: 20Apr65/ ORIG REF: 005/ OTH REF: 005

Card 1/1 awm

UDC: 541.64

YEGOROVA, Z.A.

3(5) PHASE I BOOK EXPLOITATION SOV/2154

Akademiya nauk SSSR. Vostochno-Sibirskiy filial

Syr'yevyye resursy legkikh metallov Vostochnoy Sibiri, tom. 2(Light Metal Resources of Eastern Siberia, Vol 2) Moscow, 1958. 298 p. (Series: Its: Trudy, vyp. 13) 1,200 copies printed.

Editorial Board: N.S. Alekseyev, Ye. P. Besselitsyn, V.S. Brashev, A.F. Li, Doctor of Geological and Mineral Sciences, and Ye. I. Khasanov (Resp. Ed.) Candidate of Technical Sciences; Ed. of Publishing House: V.K. Shlepov; Tech. Ed.: P.S. Kashina.

PURPOSE: This issue of the Eastern Siberian Branch Transactions is of interest to structural, exploration and mining geologists, mineralogists, and metallurgists in the light metal industries.

COVERAGE: This collection of articles is a compilation of the reports presented at the third coordinated conference on "The Creation of a Light Metals Industry in Eastern Siberia Based on Local Ores" organized by the Laboratory of Electrometallurgy of the Eastern Siberian Branch of the AN SSSR in October, 1956. It met for the purpose of promoting coordination between the activities of the power generation combines and the fast developing light metals industry of Eastern Siberia. The reports indicate that large aluminum and titanium-magnesium combines are being constructed in the Krasnoyarsk Kray and the Irkutsk Oblast These areas provide the cheapest sources of coal and electrical energy. Individual articles also report on the following subjects: general questions in the development of the light metals industry in Eastern Siberia, sillimanite ores, nepheline syenites, bauxites, magnesium ores, etc. References accompany each article.

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YEGOROVA, Z.A.

Occurrences of nepheline syenites in the Buryat A.S.S.R. and Irkutsk Province. Trudy Vost.-Sib. fil. AN SSSR no.13:101-106 '58. (MIRA 12:12)

1. Irkutskoye geologicheskoye upravleniye.
(Buryat-Mongolia--Nepheline syenite)
(Irkutsk Province--Nepheline)

LEVCHANOVSKIY, G.N., kand.tekhn.nauk; YEGOROVA, Z.F., inzh.

Physical and mechanical properties of loess-type clayey soil fortified by ground unslaked lime. Trudy Zap.-Sib.fil.ASiA no.3: 132-138 '60. (MIRA 15:2)

(Soil cement)

LEVCHANOVSKIY, G.N., kand.tekhn.nauk; YEGOROVA, Z.F., inzh.

Constructing stabilized soil roads in Novosibirsk Province. Avt. dor. 23 no.4:5-7 Ap '60. (MIRA 13:6)
(Novosibirsk Province--Road construction)

LEVCHANOVSKIY, G.N., kand.tekhn.nauk; YEGOROVA, Z.F., inzh.; ZVER'KOV, A.Ye.

Soil stabilization in Novosibirsk Province with pulverized quick lime treated for waster resistance. Avt.dor. 24 no.5:10-12 My '61. (MIRA 14:6)

1. Nachal'nik Novosibirskogo dorozhno-stroitel'nogo upravleniya (For Zver'kov).
(Novosibirsk Province—Soil stabilization) (Lime)

LOPUKHOV, N.D., kand. tekhn. nauk; YEGOROVA, Z.F., inzh.; CHASHCHINA, N.I., inzh.

Study of the distribution of moisture in the body of soil cement pilings. Trudy Zap.-Sib. fil. ASIA no.7:157-160 '62. (MIRA 18:2)

GATAULLIN Shavkat Lutfullovich; IVANOV, A.I., retsenzent; YEGOROVA, Z.F., retsenzent; CHEBOTAREVA, A.V., red.; KLIMONTOVICH, V.L., red.

[Study of semiconductors in physics course in secondary schools; manual for teachers] Izuchenie poluprovodnikov v kurse fiziki srednei shkoly; posobie dlia uchitelia. Moskva, Prosveshchenie, 1964. 73 p. (MIRA 18:1)

MAKAROVA, A.N.; YEGOROVA, Z.M.; BERLIN, A.Ya.

Derivatives of di(α-aminoacylamido)-1,4-benzoquinones. Part 1: Reaction of 2,5-dichloroacetamino-3,6-dichloro-1,4-benzoquinone with ammonia and ethylenimine. Zhur.ob.khim. 32 no.4:1285-1289 Ap '62. (MIRA 15:4)

(Benzoquinone) (Ammonia) (Ethylenimine)

DARIYEV, A.D.; REZANOVA, O.I.; YEGOROVA, Zh.P.; IGNAT'YEVA, Ye.N.

Chemical and petrographic characteristics of the coals of Gusinoozersk deposits of the Buryat A.S.S.R. Izv. SO AN SSSR no.7 Ser. khim. nauk no.2:134-138 '65.
(MIRA 18:12)

1. Buryatskiy kompleksnyy nauchno-issledovatel'skiy institut, Ulan-Ude. Submitted May 5, 1964.

YEGOROVA, L. S.

Action of radioactive radiations on carbon tetrachloride and mixtures $CCl_4 + C_2Cl_6$ and $CCl_4 + CBr_4$. A. V. Zimin and Z. S. Egorova. *Sbornik Rabot Radiatsionnoi Khim., Akad. Nauk S.S.S.R.* 1955, 241–8.—Total radiation from Co^{60} causes formation of the free halogens from CCl_4, C_2Cl_6, C_6Cl_6, or CBr_4. The halogen is one of the primary radiolysis products and its yield depends substantially on the radiation dosage and the nature of radiation. Relatively greater stability of C_2Cl_6, CBr_4, and C_6Cl_6 is attributed to the great mass of these mols. and their structures. In irradiation of mixed $CCl_4 + CBr_4$ the yield of Cl and Br depends on the proportions of the components, increasing with increased proportion of CCl_4 in the mixt. G. M. Kosolapoff

AUTHORS: Shorygin, P. P., and Yegorova, Z. S. 20-117-5-36/54

TITLE: The Influence of Substituents on the Properties of the Molecules of Benzene Monoderivatives (Vliyaniye zamestiteley na svoystva molekul monoproizvodnykh benzola).

PERIODICAL: Doklady AN SSSR, 1957, Vol. 117, Nr 5, pp. 856-859 (USSR).

ABSTRACT: The present paper investigates various monoderivates of benzene PhX, which contain as substituents X alkyle groups, halogenatoms and other groups of different types. The authors were interested in the problem, wether a common basis exists for the different manifestations of the influence of the substituents on the benzene ring. One of these manifestations consists in an increase of the intensity of the characteristic lines of the benzene ring in the spectra of the combination dispersion. The intensity of these lines is shortly reported on. The first table contains the following: 1) The results of the measurements of the coefficients of the integral intensity of the line of the benzene ring $\sim 1600^{-1}$ in the spectra of the combination dispersion. 2) The values of excitation of the molecular refraction at λ = 5893 Å and at λ = 4361 Å. 3) The position of the intensive absorption bands. 4) The anomalies of the dipole moments. 5) The Khammet- constants, which determine the influence of the substituents on the

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The Influence of Substituents on the Properties of the Molecules of Benzene Monoderivatives

power of reaction of the groups being in a para-position. The coefficients of the intensity of the lines of combination dispersion were determined photographically for solutions in CCl_4. Dimethyle-aniline and nitrostyrene were investigated in cyclo hexane, A great proportion of the coefficients was also determined photoelectrically with the method of V. P. Bazov. Benzene, toluene and phenole each show two lines in the range of 1600 cm^{-1}. In the case of PhX there obviously exist two types of oscillation of the benzene ring with frequencies close to each other. One of these two is symmetric. The alkyle groups show little influence on the chemical, electrical and optical properties of PhX. The substituents with a double bonding and the benzene rings have a strong influence on the optical properties, but little influence on the chemical properties and on the dipole moments. The substituents with a marked electropositive and electronegative character strongly influence all these properties. The similarity of the absorption bands must have a greater importance for dispersion and for the intensity of the lines of combination dispersion than for refraction. No common parallelism is observed between the various phenomena of the interacting influence of the atom groups in the molecules PhX, there may be observed, however, a marked correspondence between the phenomena of the interacting influence of the groups in

The Influence of Substituents on the Properties of the Molecules of Benzene Monoderivatives 20-117-5-36/54

the various optical properties of PhX.
There are 2 tables, and 4 references, 2 of which are Slavic.

ASSOCIATION: Physico-Chemical Scientific Research Institute imeni L. Ya. Karpov (Nauchno-issledovatel'skiy fiziko-khimicheskiy institut imeni L. Ya. Karpova).

PRESENTED: July 6, 1957, by V. N. Kondrat'yev, Academician.

SUBMITTED: February 1, 1957.

Card 3/3

YEGOROVA, Z.S., Cand Chem Sci —(diss) "Spectroscopic study of the reciprocal effect of atoms and atomic groups in the molecules of aromatic compounds." Mos, 1958. 10 pp (State Committee of the Council of Ministers USSR on Chemistry. Order of Labor Red Banner Sci Res Phys-Chem Inst im L.Ya. Karpov), 150 copies (KL,43-58, 114)

AUTHORS: Shorygin, P. P., Yegorova, Z. S. 76-32-4-30/43

TITLE: The Effect of Substituents on the Molecular Properties of Aromatic Compounds of the C_6H_5X Type (Vliyaniye zamestiteley na svoystva molekul aromaticheskikh soyedineniy tipa C_6H_5X)

PERIODICAL: Zhurnal Fizicheskoy Khimii, 1958, Vol. 32, Nr 4, pp. 915 - 921 (USSR)

ABSTRACT: Investigations of various monosubstituents of benzene containing alkyl groups, halogen atoms or other groups as substituents were carried out. As one of the most characteristic properties the increase of the intensity of benzene-ring bands in the Raman spectrum is regarded, where the band $\sim$1600 cm $^{-1}$ not very intensive in benzene and alkyl benzenes shows an essential intensification in the substitution products, which can serve as an orientation of the polarization determinations dependent on the nuclear coordinates of the benzene ring. The band in the section 1000 cm $^{-1}$ is less sensitive in this respect, however, it is also intensified in most cases when the 1600^{-1} line is intensified. The results of the measurements of the Raman spectra I_{1600} and I_{1000} as well as other measuring values

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The Effect of Substituents on the Molecular Properties of Aromatic Compounds of the C_6H_5X Type

of the different substitution compounds are mentioned on a table. The majority of measurements of the 1600 cm^{-1} band were verified on a photoelectric spectrophotometer according to V. P. Bazov, the data for phenylbutadiene by V. M. Medvedeva, for aniline by Z. Alaune and for ethylacetanilide by T. N. Shkurina having been determined. For the oscillations of the benzene ring in the monodeuterium benzene a representation according to M. A. Kovner is mentioned. From the table can, among other, be seen that the alkyl groups exercise little influence on the chemical, electrical and optical properties of the PhX molecules, while substituents with C=C bindings and a benzene ring have a great effect on the optical properties and a small effect on the chemical properties as well as on the dipole; strongly electronegative or electropositive substituents show noticeable effect on all these properties. Based on the results obtained the authors state that no general parallelism can be observed in the various phenomena of the interaction of the atom groups in the molecules PhX and that thus the con-

The Effect of Substituents on the Molecular Properties of Aromatic Compounds of the C_6H_5X Type

ception "stronger or weaker interaction" of the atom groups can be used only in certain conditions (a series of similar compounds etc.). Even in simple models the influence of the electric field of the substituents on the benzene ring can, for instance, be characterized by any parameter, except when the model was roughly simplified and only a dipole difference in length and power of the charges was assumed. A difference according to the "Electro-Negativity" of the substituent is also limited, as, for instance, the dipole moment of HJ is smaller than of MeJ and on the other hand that HF is greater than that of MeF. There are 3 figures, 2 tables and 4 references, 2 of which are Soviet.

ASSOCIATION: Fiziko-khimicheskiy institut im. L. Ya. Karpova,Moskva (Moscow Physicochemical Institute imeni L. Ya. Karpov)

SUBMITTED: July 6, 1957
AVAILABLE: Library of Congress
Card 3/3 1. Cyclic compounds--Molecular structure 2. Spectrophotometers --Applications 3. Raman spectroscopy--Applications

AUTHORS: Shorygin, P. P., Yegorova, Z. S. 20-118-4-38/61

TITLE: The Influence of Substituents on the Properties of the Molecules of Para-Derivatives of Benzene (Vliyaniye zamestiteley na svoystva molekul para-diproizvodnykh benzola)

PERIODICAL: Doklady Akademii Nauk SSSR, 1958, Vol. 118, Nr 4, pp. 763-766 (USSR)

ABSTRACT: This work investigates the spectra and the dipole moments of the para-derivatives of nitrobenzene

with various substituents X. The nitro group belongs to the most electronegative groups; the characteristic marks of the influence of the electropositive substituents are in case of the derivatives of nitrobenzene expressed especially clearly. In a table the following quantities are given:

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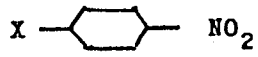
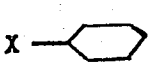
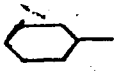
The Influence of Substituents on the Properties of the 20-113-4-38/61
Molecules of Para-Derivatives of Benzene

1) The values of the shifts ($\Delta\omega$) of the symmetrical valence oscillations of the nitrogroup, according to the measurements of the spectra of the combination scattering (Raman spectra) in the benzene solutions. The shifts $\Delta\omega$ are caused by the introduction of the substituent X.
2) The coefficients of the integral intensity of this line in the spectra of the combination scattering.
3) The characteristic of the intensive absorption bands in the ultraviolet range.
4) The difference $\Delta\mu$ between the observed amount of the dipolmoment of



and the vectorial sum of the moments of

 and  .

5) The constants by Khammet σ_{pair}, which predominantly were

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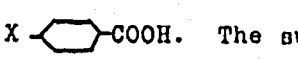
The Influence of Substituents on the Properties of the Molecules of Para-Derivatives of Benzene 20-118-4-38/61

ascertained from the dissociation constants of



$X-C_6H_4-COOH$. The substituents C_6H_5. and $CH_2:CH$ have only a small influence on the dipole moments and the chemical properties, but they influence the optical properties to a considerable extent. The alkyl groups X influence the dipole moments of the nitro compounds. The differences in the found values of the constants σ are quite important, but these quantities have only a very approximate character. Altogether the transition from $-CH_3$ to $-CMe_3$ is connected with a very insignificant change of the characteristic marks of the mutual influence of the groups. The series of the electropositive substituents, which were composed according to the degree of their influence on the dipole moments, the frequency, and the intensity of the line of the nitrogroup resemble each other very closely. Probable reasons for the even so observed differences are given. A more complete agreement is observed for the characteristic marks of the influence of the substituents on the different optical

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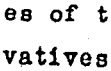
The Influence of Substituents on the Properties of the 20-118 -4-38/61
Molecules of Para-Derivatives of Benzene

properties of the molecules X-  -NO_2. In case of the monoderivatives of benzene, however, considerable differences are observed. A here given formula describes more or less satisfyingly the dependence of the intensity of the symmetrical valence oscillations of the nitro group on the frequency of the incident light.
There are 2 figures, 1 table, and 1 Soviet reference.

ASSOCIATION: Fiziko-khimicheskiy institut im. L. Ya. Karpova (Physical-Chemical Institute imeni L. Ya. Karpov)
Institut organicheskoy khimii im. N. D. Zelinskogo Akademii nauk SSSR (Institute for Organic Chemistry imeni N. D. Zelinskiy of the AS USSR)

PRESENTED: September 11, 1957, by B. A. Kazanskiy, Member of the Academy

SUBMITTED: June 27, 1957

AVAILABLE: Library of Congress

Card 4/4

AUTHORS: Shorygin, P. P., Yegorova, M. B. SOV/20-121-5-29/50

TITLE: On the Dependence of the Conjugation Characteristics of the Rotation Angle of the Methoxy- and Dimethyl-Amino Groups With Respect to the Plane of the Benzene Ring (O zavisimosti priznakov sopryazheniya ot ugla povorota metoksil'noy i dimetilaminogrupp otnositel'no ploskosti benzol'nogo kol'tsa)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol. 121, Nr 5, pp. 869-872 (USSR)

ABSTRACT: Whenever steric hindrances are lacking, the characteristic features of the mutual influence of the group $-N(CH_3)_2$, and $-OCH_3$, respectively, and of the benzene ring can be easily observed. As is known, the deviations of the molecular energy of anisole and dimethyl aniline calculated according to the additive scheme from those determined from the heats of combustion, attain from 8 to 10 kcal/mol; the anomalies of the dipole moments of these molecules are also considerable. The introduction of $-OR$- and NR_2-groups into the benzene-ring leads to a considerable approximation of the bands of

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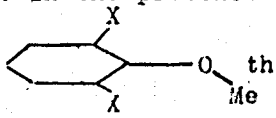
absorption and to a sharp increase of the polarizability of the molecules and to a change of other optical properties. According to radiographic data the methoxy group is situated in the plane of the benzene ring, whenever ortho-substituents are lacking. In the presence of substituents (X) in molecules

of the type  the placing of the OMe group in the

plane of the benzene ring becomes impossible; the C — O-plane

must obviously form an angle θ with the plane of the benzene ring which is the greater, the greater are the dimensions of the X-group. The difficulties of interpreting the spectra connected with the immediate influence of the X-substituent, become more insignificant by passing over to compounds of the type

On the Dependence of the Conjugation Characteristics of the Rotation Angle of the Methoxy- and Dimethyl-Amino Groups With Respect to the Plane of the Benzene Ring

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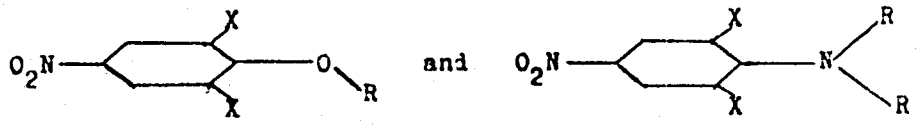

The characteristics of the influence of NR_2 and OR on the system of conjugated bonds "nitro-group - benzene-ring - amino group" are more distinctly marked than the characteristics of their influence on the benzene ring in the molecules $PhNR_2$ and PhOR. The existence of a nitro-group also permits the establishment of additional criteria, in order to judge on the influence of NR_2 and OR at different rotation angles (θ) on the system of conjugated bonds. The intensity of the lines of the nitro-group is particularly sensitive in comparison with the influence of such substituents which are in a para-position, i.e. of the NR_2- or OR-groups. Table 1 shows different respective parameters for 12 compounds. It follows

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On the Dependence of the Conjugation Characteristics of the Rotation Angle of the Methoxy- and Dimethyl-Amino Groups With Respect to the Plane of the Benzene Ring

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from table 1 that the OH-, OR-, NH_2-, and NR_2-groups in the molecules of p-nitrophenol, p-nitro-anisole, p-nitro-aniline and p-nitro-dimethyl aniline reduce the frequency of the nitro-group. The intensity of the Raman-line of the nitro-group, on the other hand is increased. Finally they influence the spectrum of absorption in the sense of an increase and an approximation of the spectrum of absorption. The anomalies of the dipole moment are especially great with the nitro-amines. Concluding, influences exercized by individual groups in the afore-mentioned compounds are discussed and compared with each other.
There are 2 figures, 1 table, and 2 references, which are Soviet.

ASSOCIATION: Nauchno-issledovatel'skiy fiziko-khimicheskiy institut im. L.Ya. Karpova (Scientific Physicochemical Research Institute imeni L.Ya. Karpov)

On the Dependence of the Conjugation Characteristics of the Rotation Angle of the Methoxy- and Dimethyl-Amino Groups With Respect to the Plane of the Benzene Ring

SOV/20-121-5-29/50

PRESENTED: April 11, 1958, by B. A. Kazanskiy, Member, Academy of Sciences, USSR

SUBMITTED: April 4, 1958

Card 5/5

Y. GOROVA, Z. S.

SHORYGIN, P. P. and YEGOROVA, Z. S.

"On Relation of Spectra to Angle of Twist of Methoxy and Dimethylamino Groups with respect to Benzene Ring Plane."

report presented at the 4th International Meeting of Molecular Spectroscopy, Bologna, Italy, 7-12 Sept 1959.

Institute of Physical Chemistry, the University of Moscow.

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S/190/60/002/006/007/012
B015/B064

11.2210

AUTHORS: Yegorova, Z. S., Malinskiy, Yu. M., Karpov, V. L., Kalmanson, A. E., Blyumenfel'd, L. A.

TITLE: Chemical Changes of Polyvinylchloride Under the Influence of Ionizing Radiations

PERIODICAL: Vysokomolekulyarnyye soyedineniya, 1960, Vol. 2, No. 6, pp. 891-898

TEXT: The present paper investigates the dependence with time of the color change of PVC irradiated or non-irradiated under different conditions. The structural changes brought about by irradiation were also investigated. PVC powder samples and films (40, 180, and 200 μ thick) were irradiated at 293°K and 77°K in vacuum (approximately 10^{-4} torr), and stored in vacuum or in the air. Irradiation was made with fast neutrons with an energy of 200 kev, with a current density of 0.6 μ a/cm^2 being applied to the samples provided for determining the absorption spectra (on the CΦ-4, UR-20, SF-4) spectrometer) and paramagnetic electron resonance, and for determining the infrared spectra 1.2 μ a/cm^2. An

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83702

Chemical Changes of Polyvinylchloride Under the Influence of Ionizing Radiations

S/190/60/002/006/007/012
B015/B064

L. A. Vasil'yev irradiated the samples. In the infrared spectrum of the non-irradiated PVC (Fig. 1) a strong absorption band lies at 1256 cm^{-1} for the -CHCl- group (Ref. 8), at 1428 cm^{-1} for the deformation oscillations of the methylene group (Ref. 9), and at 1330 cm^{-1} for the CH group (Ref. 9), at 1097 cm^{-1} for the C-C bond of the carbon chain, at 960 cm^{-1} for the methylene group and the C-C bond of the carbon skeleton, as well as at 698 cm^{-1} for the C-Cl bond. The intensity of the 1256 cm^{-1} and 698 cm^{-1} band is reduced in the spectrum of PVC irradiated in vacuum at room temperature for 3 hours which indicates a reduction of the chlorine content, as well as of the 1428 cm^{-1} and 960 cm^{-1} indicating a reduction in the amount of methylene groups. In this connection conjugate double bonds are formed under the separation of HCl (new band in the range of 1720-1530 cm^{-1}). The further results obtained by spectral analyses and paramagnetic electron resonance indicate that the color change of PVC is due to processes occurring under the participation of radicals. By the method of the paramagnetic electron resonance the concentration of the radicals was found to decrease with time. In vacuum, this decrease is apparently due to a recombination of the radicals,

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Chemical Changes of Polyvinylchloride Under the Influence of Ionizing Radiations

S/190/60/002/006/007/012
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and in the presence of air oxygen to a reaction of the latter with the free radicals under the formation of peroxide radicals. The vanishing of the free radicals is accelerated on heating, with chromophores (very likely with polyene character) being formed, intensivating the color of PVC. The infrared spectra were recorded with a device of the firm Khil'ger, model 209. There are 7 figures and 11 references: 5 Soviet, 5 US, and 1 French.

ASSOCIATION: Fiziko-khimicheskiy institut im. L. Ya. Karpov (Physico-chemical Institute imeni L. Ya. Karpov). Institut khimicheskoy fiziki AN SSSR (Institute of Chemical Physics of the AS USSR)

SUBMITTED: February 22, 1960

S/076/61/035/002/002/015
B124/B202

AUTHORS: Shorygin, P. P., Roshchupkin, V. P., Petukhov, V. A., and Yegorova, Z. S.

TITLE: Effect of substituents on the properties of molecules containing a system of conjugate π bonds

PERIODICAL: Zhurnal fizicheskoy khimii, v. 35, no. 2, 1961, 258-268

TEXT: The authors study the group of para-derivatives of nitrobenzene $X-C_6H_4-NO_2$ with different substituents X. To characterize the compounds the following values are given in Table 1: 1) difference ($\Delta\omega_s$, in cm^{-1}) between the values of symmetrical stretching vibrations of the nitro group of the compound $X-C_6H_4-NO_2$ and those of non-substituted nitrobenzene on the basis of the Raman spectra of benzolic solutions; the accuracy is $\pm$ 0.5 - 1cm^{-1} (the values with asterisks are obtained from the infrared spectra). In the case of doublets the mean value of the frequency which has the symbol $\sim$ is given. The frequency

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Effect of substituents on the properties...

ω_s of the nonsubstituted nitrobenzene in benzene is 1347.5 cm^{-1}; 2) the difference ($\Delta\omega_{as}$ in cm^{-1}) between the values of the frequency of the antisymmetric stretching vibration of the nitro group of compound X - C6H4 - NO_2 and of those of nitrobenzene on the basis of the infrared absorption spectra of the benzolic solutions; accuracy ±2 cm^{-1}. The frequency ω_{as} of nitrobenzene is 1533 cm^{-1}; 3) the coefficient of the total intensity (I_s) of the Raman bands with the frequency ω_s; 4) characteristics of the intense absorption bands in the UV range for solutions in heptane; the wavelengths are given in parentheses in A; at the values $\varepsilon/1000$, ε denotes the (decimal) molar absorption coefficient in the maximum of the bands; 5) difference (λ_1, in A) between the λ_1-values of the compounds X - C6H4 - NO_2 and those of nitrobenzene from the values measured in benzene; 6) difference ($\Delta\mu$) between the dipole moment μ of compound X - C6H4 - NO_2 and the sums of the vectors of the moments X - C6H5 and C6H5 - NO_2 (in debyes) which also characterize the interaction

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of the groups concerned, and 7) Hammett constants σ_{para} characterizing the effect of the substituents X on the reactivity of the groups Y in the molecules X - ⬡ - Y. The electropositive and electronegative substituents influence the oscillation frequency of the nitro group as well as the deviations of the dipole moments from the additivity and the reactivity mainly in opposite direction, whereas they influence the optical properties (intensity of Raman bands of the NO_2 group, polarizability, position and intensity of the absorption bands) in the same direction. In all cases, the effect of the electropositive substituents in the molecules X - ⬡ - NO_2 is considerably stronger than that of the electronegative substituents, whereas the opposite holds for the molecules. Ramified and not ramified alkyl groups influence the physical properties of the nitro compounds in the same way. The effect of methylation on the influence of the substituents increases in the following order: $CH_3 < OH < SH < NH_2$. The effect of the substituents C_6H_5 and $CH_2:CH_2$ on the dipole moments, frequency of the nitro groups, and the chemical properties is relatively low, on the optical properties, however, it is strong. This holds for substituents of the type CH:CH·Z, $\cdot C_6H_4 \cdot Z$ and ·N:N·Z. The

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interaction of two atom groups on their chemical bonds is reduced with increasing length of the chain of the π bonds which separate these groups from one another. The effect of the substituents on the optical properties is the stronger the longer the chain of the conjugate bonds. Heavy atoms which are connected with the system of π bonds over a CH_2 bridge considerably influence the system concerned, i.e., mainly the parameters of the electron excitation levels. T. I. Ambrush, M. A. Geyderikh, Ye. A. Smirnov, A. V. Dombrovskiy, E. I. Budovskiy, G. S. Ter-Sarkisyan, U. I. Khurgin, A. Kh. Khomenko, A. N. Nesmeyanov, R. V. Golovnya, B. V. Lopatin, V. N. Vasil'yeva, and V. G. Vasil'yev are mentioned. There are 6 figures, 1 table, and 3 references: 2 Soviet-bloc and 1 non-Soviet-bloc. 1 reference to English language publications reads as follows: C. Curran, F. Palermiti, J. Amer. Chem. Soc. 73, 3733, 1951.

ASSOCIATION: Fiziko-khimicheskiy institut im. L. Ya. Karpova (Physico-chemical Institute imeni L. Ya. Karpov); Institut organicheskoy khimii AN SSSR (Institute of Organic Chemistry AS USSR)

SUBMITTED: April 11, 1957

S/076/61/035/002/002/015
B124/B202

Effect of substituents on the properties...

(1) Группа X в O_2N–(ring)–X	(2) Валентные колебания нитрогруппы				
	$\Delta\omega_s$	$\Delta\omega_{as}$	I_s	λ_i; $\left(\frac{\varepsilon_i}{1000}\right)$;	f_i
·O–(ring)	—5	—9	4000	2930 (15)	0,37
·Ph	—1,5	—8	5500	2940 (18)	0,45
·NHCOR	—1 •	—	—	3000 (15,4)	0,44
·NRCHO	~ —10	~ —18	6000	3040 (12)	0,35
·SH	—7,5	—	6000	3050 (12,7)	0,32
·SR	—8	—12	17000	3260 (15)	0,30
.C:N–(ring)–R	—4	—5	18000	3530 (9)	0,18
(5) — ферроцен	—8	—10	—	2900 (10,5) 3900 (4) 3120 (16,5)	0,35 0,06 0,37
·NH_2	—12	—16	20000	3200 (16)	0,37
.N:N–(ring)	—3 •	0	—	3250 (24)	0,64
.C:C·C:C	—6,5	—9	22000	3300 (22) 3130 (21)	0,60
·C:C–(ring)	—6	—10	22000	3300 (18,7)	0,52
·NH·NH·Ph	—16	~ —18	38000	3300 (15,7)	0,47
·NH·NH_2	—19	—15	45000	3350 (19)	0,47
.C:C(Ph)(Ph)	—6	—10	66000	3450 (20)	0,50
·NHR	—21	~ —20	75000	3400 (18)	0,39
·NHPh	~ —26	—27	—	3530 (21)	0,42
·NR_2	—28	—	240000	3540 (20)	0,41
·NEt_2	—29	~ —24	400000	3620 (22)	0,40
.C:C–C:O	— 6	—	200000	3740 (35) +	0,8
Ṅ·Ȯ ·C· Ph					
·$(C:C)_2$·Ph	—8 •	—10	—	3940 (50) +	1,2
.C:C–(ring)–NH_2	—6	—	—	3830 (26)	0,6
.C:C–(ring)–NR_2	—8	—	$5\cdot10^5$	4130 (28)	0,62
.C:N–(ring)–NR_2	—5 •	—	—	4350 (22)	0,5
.N:N–(ring)–NR_2	—9 •	—5	—	4430 (32)	0,67

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Effect of substituents on the properties...

① УФ спектры поглощения				σ_{para} ②
λ_1 ($\frac{\varepsilon_1}{1000}$)	λ_2 ($\frac{\varepsilon_2}{1000}$)	$\Delta\lambda$	$\Delta\mu$	
2180 (12)	1830 (12)	420	0,6	−0,3
2220 (12)		440	0,3	−0,0
2240 (12)		520		−0,0
2240 (9)		540		0,1
2240 (6)		580	0,6	−0,05
2200 (8)		780		
2550 (13)				
2800 (11)				
2260 (8,5)	1940 (19)	820	1,0	−0,85
2140 (13)		740	0,4	
2340 (14)		760		
2380 (12)	1985 (34)	720	0,5	−0,65
2280 (12)		890		
2250 (11)		870		
2400 (17)		930		
2220 (8)	1960 (21)	1050	1,2	−0,7
2350 (8)		1130	0,8	−0,63
2280 (8)		1180	1,4	−0,7
2320 (8)		1260		
2670 (11)		1200		
3060 (19)	2450 (15)	1430		?
2756 (11)		1380		
2890 (12)	1960 (31)	1080		
2690 (24)		1870		
2780 (12)		2050		

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S/076/61/035/002/002/015
B124/B202

Effect of substituents on the properties...

(1) Группа X в. $O_2N-C_6H_4-X$	(2) Валентные колебания нитрогруппы $\Delta\omega_s$	$\Delta\omega_{as}$	I_s	$\lambda_i\;(\frac{\varepsilon_i}{1000})$	f_i
·H	0	0	700	2520 (9,6)	0,27
·SO_2R	3	8	800	2470 (11,5)	0,34
·$CONH_2$	−1*	—	—	2520 (12,5)	—
·F	0	0	900	2580 (8,5)	0,23
·COOEt	~0	−2	1000	2540 (14)	0,36
·CHO	~−2	2	1000	2580 (17)	0,41
·CH_2Cl	−1	−4	1100	2580 (12)	0,31
·CCl_3	—	—	—	2550 (14,5)	—
·OCOR	1	1	1200	2640 (10,2)	0,29
·Cl	~−1	−3	1400	2670 (11)	0,29
·CH_3 NH–C_6H_4–R	−4	−9	—	[2600 (15)]	—
·R	−2	−8	1450	2650 (10,2)	0,28
·CR_3	−2	−8	1500	2650 (10,5)	0,29
·CH_2NR_2	−2	−8	1550	2620 (10,5)	0,30
·Br	~3	2	1600	2700 (12)	0,30
·CO NR–C_6H_4–OR	−1	~−9	2000	[3000 (5)]	—
·J	0	~−2	2700	2880 (12,5)	0,32
·CH_2J	−3	−5	2800	2660 (12,5)	0,40
·OH	−5	~−10	3200	2850 (10,5)	0,26
·C:C	−2,5	—	3500	2900 (16)	0,4
·OR	−5	~−16	4000	2920 (12)	0,29
·OEt	~−6	~−18	4200	2950 (12,3)	0,30

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S/076/61/035/002/002/015
B124/B202

Effect of substituents on the properties...

σ_{para} ④	$\Delta\mu$	$\Delta\lambda_1$	$\lambda_2 \left(\frac{e_0}{1000}\right)$	$\lambda_1 \left(\frac{e_0}{1000}\right)$ ⑦
0	0	0	1960 (20) 1745 (30)	[2100 (10)]
0,6		80		
0,35	0,1	50		
0,05		80		1870 (28)
0,5	0,1	80	2000 (18) 1820 (25)	1925 (23) [2150 (10)]
0,4		50		
0,2	0,15	120	2000 (14) 1810 (24)	2160 (11)
0,4		130		2450 (18)
0,2	0,1	130	2000 (13) 1770 (26)	2130 (8,5)
0,15		120		2130 (8)
0,2	0,15	170		2310 (15,3)
0,25		340	1940 (32) 1750 (24)	[2200 (10)]
0,3	0,4 0,2	160		2190 (9)
0,35	0,7 0,35	330	1880 (21)	2200 (9)
0,25	0,45	480		2200 (8)
0,25		480		

⑦ у-о спектры поглощения

Card 8/9

Effect of substituents on the properties.....

Legend to Table 1: 1) group X in, 2) stretching vibrations in the nitro group, 3) UV absorption spectra..., 4) σ_{para}, 5) ferrocene. The methyl group is designated with R in the formulas, the H-atoms at the carbon are omitted in most of the formulas; the hexagon or Ph denote the benzene ring. λ, ε and f (oscillator output) are given for solutions in heptane and $\Delta\lambda_1$ for solutions in benzene; λ_1 of the non-substituted nitrobenzene in benzene is 2620 A approximately; + are the absorption bands with fine structure; the tables give the values λ and ε of the most intense component. The position of the inflection point of the absorption curve is given in brackets.

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32348
S/190/62/004/001/010/020
B101/B110

54600 1304

AUTHORS: Yegorova, Z. S., Malinskiy, Yu. M., Karpov, V. L., Kalmanson, A. E., Blyumenfel'd, L. A.

TITLE: Kinetics of disappearence of free radicals in irradiated polyvinyl chloride

PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 4, no. 1, 1962, 64 - 65

TEXT: The authors studied the decrease of concentration of free radicals in irradiated polyvinyl chloride in vacuo at 70 - 100°C by means of epr. Degassed polyvinyl chloride powder was irradiated with 200-kev electrons (0.6 μa/cm^2) for 10 min in vacuo (about 10^{-4} mm Hg) at 77° K. The epr signal was recorded by the apparatus of A. G. Semenov, N. N. Bubnov (Pribory i tekhnika eksperimenta, 1, 92, 1959) and compared with that of the standard diphenyl picryl hydrazyl.

Card 1/3

Kinetics of disappearence of ...

Results:

Temperature, °C	70	80	90	100
$(1/T)\cdot10^3$	2.92	2.83	2.76	2.68
$k\cdot10^{22}$	0.06	0.28	2.76	8.04

T = absolute temperature, k = constant of the rate of disappearence of radicals (number of paramagnetic particles$^{-1}\cdot g\cdot sec^{-1}$). The function log k = f(1/T) is linear (second-order reaction). In the temperature range studied, the activation energy of recombination was 44±5 kcal/mole. There are 2 figures and 4 references: 2 Soviet and 2 non-Soviet. The two references to English-language publications read as follows: A. A. Miller, J. Phys. Chem., 63, 1755, 1959; Z. Kuri, H. Ueda, S. Shida, J. Chem. Phys., 32, 371, 1960.

ASSOCIATION: Fiziko-khimicheskiy institut im. L. Ya. Karpova (Physico-chemical Institute imeni L. Ya. Karpov). Institut khimicheskoy fiziki AN SSSR (Institute of Chemical Physics AS USSR)

32348
S/190/62/004/001/010/020
B101/B110

Kinetics of disappearence of ...

SUBMITTED: January 30, 1961

X

Card 3/3

ter irradiation in a vacuum indicates that the polymer radical is joined to the tin

Card 1/2

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001962520001-5"

SOURCE: Plasticheskiye massy, no. 6, 1965, 18-23

TOPIC TAGS: radiation hardening, unsaturated resin, resin structure, polymer structure, thermal hardening

ABSTRACT: A number of various unsaturated resins were hardened by exposure to radiation from a Co^{60} source. Doses of 0.5—50 Mrad were used. The irradiation was conducted in air. Parallel hardening by thermal treatment was undertaken for comparison purposes. All the resins investigated can be divided into two categories those which are hardened by relatively small doses of radiation (1-5 Mrad) and those which are not. The first category consists of unsaturated polyester resins, such as diethylene glycol maleinate phthalate and polyesters with terminal methacrylate groups, and the second category, of such resins as ethyleneglycol maleinate, epoxy resins, phenol-formaldehyde resin, and epoxy-phenolic resin. The structure of

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L 58477-65

ACCESSION NR: AP5014687

the hardened samples was studied by observing their infrared absorption spectra. Conclusions made were based on measurements of IR bands associated with carbon—carbon double bonds, eneone groups, ether and ester functions, carbonyl, and other groups. It was found that unsaturated polyester resins harden most easily under the influence of radiation. Both thermal and radiation-induced hardening of unsaturated polyester resins depend [illegible] while irradiation of the phenol-formaldehyde resin [illegible] a reaction of furfural with the diene function of the resin, therma[illegible] the reaction of furfural [illegible]

ures

ASSOCIATION: none

SUBMITTED: 00 ENCL: 00 SUB CODE: MT, NP

NO REF SOV: 004 OTHER: 007 ATD PRESS: 4019

llc

Card 2/2

L 58760-65 EWT(l)/EPA(c)-2/EWT(m)/EPF(c)/EPF(n)-2/EPR/EWP(l)/T/EWA(h)/EWA(l)

678.06-419:677.521:621.039.53

AUTHOR: Kiselev, B. A.; Yegorova, Z. S.; Karpov, V. L.; Bodrova, V. V.; Porokhov, V. S.

TITLE: Use of irradiation to improve glass-reinforced plastics

SOURCE: Plasticheskiye massy, no. 7, 1965, 35-38

Card 1/2

L 58360-65

ACCESSION NR: AP5018038

It was found that irradiation with small doses improves the physical and mechanical

Orig. art. has: 5 tables and 6 figures.

ASSOCIATION: none

SUB CODE: MT, NP

L 2265-66 EWT(m)/EPF(c)/EPF(n)-2/EWP(j)/EWA(h)/EWA(l) GG/RM
ACCESSION NR: AP5022220 UR/0191/65/000/009/0008/0012
678.742.2.01:539.12.04:678.048

AUTHOR: Gladkova, G. I.; Yegorova, Z. S.; Karpov, V. L.; Leshchenko, S. S.; Mitrofanova, L. V.; Slovokhotova, N. A.; Finkel', E. E.; Cherntsov, S. M.

TITLE: Thermal stabilization of irradiated polyethylene by industrial antioxidants

SOURCE: Plasticheskiye massy, no. 9, 1965, 8-12

TOPIC TAGS: antioxidant additive, polyethylene, antirad additive, gamma radiation, radiation effect

ABSTRACT: The following industrial antioxidants were introduced into polyethylene in amounts of 2, 5, and 10%: 2,2'-methylenebis(4-methyl-6-tert-butylphenol); 4,4'-methylenebis(2-methyl-6-tert-butylphenol); 2,2'-methylenebis(4-ethyl-6-tert-butylphenol); N-isopropyl-N'-phenyl-p-phenylenediamine (nonox ZA); 4,4'-thiobis (6-tert-butyl-m-cresol); 4,4'-thiobis(2-tert-butyl-m-cresol); phosphite of P-24 (P-24 being a phenol-styrene condensation product); and di-β-naphthyl-p-phenylenediamine. The polyethylene samples were then irradiated, kept in air thermostated at 150 and 200C for various periods of time, and tested for relative elongation and tensile strength. The compounds were found to have a stabilizing effect if

Card 1/2

L 2265-66
ACCESSION NR: AP5022220

3

their content is 10 to 20 times the amount introduced into polyolefins to protect the latter from oxidation during processing. The most effective antiradiation additives kept the elongation of polyethylene irradiated with Co^{60} gamma rays at 300-350%. Infrared analysis showed that during irradiation, particularly in the course of thermal aging, the stabilizer concentration in polyethylene decreases markedly. It is found that irradiation not only causes the formation of trans-vinylene unsaturation, but also gives rise to systems of conjugated double bonds whose number increases substantially during thermal aging. Carbonyl groups are formed both during irradiation and thermal aging, but in much smaller quantities than in cable polyethylene. "The authors thank G. Ya. Richmond for supplying the antioxidant samples." Orig. art. has: 7 figures. 44,55

ASSOCIATION: none

SUBMITTED: 00 ENCL: 00 SUB CODE: MT, GC

NO REF SOV: 005 OTHER: 005

Card 2/2 dg

ACC NR: AP6033274 SOURCE CODE: UR/0020/66/170/004/0868/0871

AUTHOR: Bakayeva, V. P.; Yegorova, Z. S.; Karpov, V. L.

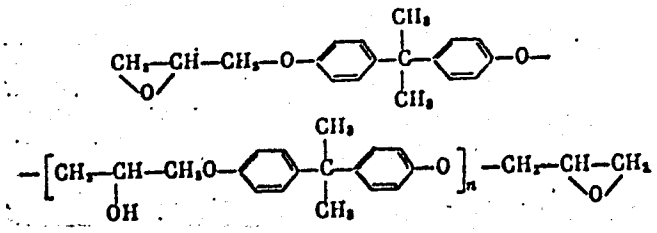
ORG: Institute of Physical Chemistry im. L. Ya. Karpov (Fiziko-khimicheskiy institut)

TITLE: The effect of ionizing radiation on epoxy resins

SOURCE: AN SSSR. Doklady, v. 170, no. 4, 1966, 868-871

TOPIC TAGS: ionizing radiation, epoxy plastic, mass spectrometry, electron paramagnetic resonance, isomerization

ABSTRACT: The authors study molecular variations which occur during irradiation of epoxy resins. Solid epoxy resins and resins synthesized from epichlorohydrin and diphenylenepropane with a molecular weight of 1000 and an epoxy number of 9-12 are studied. The structure of resins of this type is as follows:



where n=0-15

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UDC: 547.914

ACC NR: AP6033274

Powdered resin specimens were irradiated both in air and in a vacuum at room temperatures by a stream of fast electrons with an energy of 200 kev and a current density of 0.0143 ma/cm^2, and by Co^{60} gamma rays. The radiation doses varied from 20 to 1500 Mrad. The following methods were used: infrared spectroscopy, mass-spectrometric analysis, thermomechanical analysis and solubility in acetone. The results of these studies show that breaking of epoxy rings, cross linking and destruction occur during ionizing radiation. Cross linking can be explained by the fact that hydrogen atoms break away from methyl groups to form radicals. This is verified by triplet formation observed in electron paramagnetic resonance spectra during irradiation of diphenylenepropane and epoxy resin. Orig. art. has: 4 figures, 1 table, 4 formulas.

SUB CODE: 07/ SUBM DATE: 09Dec65/ ORIG REF: 006/ OTH REF: 003

Card 2/2

NIKOLAYEV, V.A. [deceased]; PAFFENGOL'TS, K.N.; YELISEYEV, N.A.; YEGOROVA-FURSENKO, Ya.N., kand.geologo-mineralogicheskikh nauk

Sergei Pavlovich Solov'ev; on his 60th birthday. Min. sbor. no.15:378-382 '61. (MIRA 15:6)

1. Chleny-korrespondenty AN SSSR (for Nikolayev, Yeliseyev).
2. Deystvitel'nyy chlen AN Armyanskoy SSR (for Paffengol'ts).
(Solov'ev, Sergei Pavlovich, 1900-)

BORODIN, Yu.P.; YEGOROVA-LEZHNEVALOVA, A.G.

Use of a combination of gamma-globulin with histamine (histaglobin) for the treatment of allergic diseases. Sovet. med. 26 no.5:74-79 My'63 (MIRA 17:1)

1. Iz Nauchno-issledovatel'skoy allergologicheskoy laboratorii (zav. - chlen-korrespondent AMN SSSR prof. A.D. Ado) AMN SSSR i Klinicheskoy bol'nitsy (glavnyy vrach - kand. med. nauk A.I. Artem'yev), Moskva.

ACC NR: AP6023050 (A) SOURCE CODE: UR/0416/66/000/004/0038/0044

AUTHOR: Yegorovskiy, A. (Lieutenant General; Commander-in-Chief; Ural Military District)

ORG: None

TITLE: Paternal concern for soldiers' living conditions

SOURCE: Tyl i snabzheniye sovetskikh vooruzhennykh sil, no. 4, 1966, 38-44

TOPIC TAGS: military personnel, food technology, food ration, physical conditioning, physical fitness, military medicine, preventive medicine

ABSTRACT: Technical advances have added immensely to the power of the Soviet Armed Forces; at the same time, the importance of the individual fighting man has been intensified. Great attention is directed to proper food and to the surroundings in which it is prepared and eaten. The food standards of soldiers in the Ural Military District have improved through the use of kitchen gardens, livestock farms and fish ponds, and these additional food sources have been created with no detriment to either military or political training, and without large financial outlay. Stress is laid on the need for food specialists. Simple ice-houses enable vegetables to be kept the year round in the District. Prefabricated hothouses are proposed for each unit. Increased care must be directed towards the maintenance of dishes and

Card 1/2

ACC NR: AP6023050

feeding equipment. The troops have recently been much better turned out, both in field exercises and in town on leave, thanks to improved facilities for care of uniforms. The comfort of barracks has greatly improved, and there are plenty of opportunities for "cultural" recreation. Swimming facilities are important for the maintenance of sound physical health. The importance of preventive care and medical services is stressed. Orig. art. has: 3 figures.

SUB CODE: 15,05,06/SUBM DATE: None

Card 2/2

KHAL'FIN, Fabian Naumovich, kand.tekhn.nauk, dots.; KICHIGIN, Vladislav Vital'yevich, inzh.; YEGORSHILOV, L.A., red.; MODLIN, G.D., tekhn.red.

[Spanning the Ob River during the construction of the Novosibirsk Hydroelectric Power Station] Perekrytie Obi pri stroitel'stve Novosibirskogo gidrouzla. Kuibyshev, Orgenergostroi, 1957. 21 p. (MIRA 11:4)
(Novosibirsk Hydroelectric Power Station)

PANKRATOV, A.Ya., prof.; YEGOSHIN, I.S., kand. veterin. nauk; TRET'YAKOVA, A.A., nauchnyy sotrudnik

Duration of the presence of the vaccine from strain no.19 and its change in the organs of sheep inoculated against brucellosis. Veterinariia 38 no.3:45-46 Mr '61 (MIRA 18:1)

1. Kirgizskiy nauchno-issledovatel'skiy institut zhivotnovodstva i veterinarii.

L 10319-67 EWP(m)/EWT(1) WW

ACC NR: AP6030445 (N) SOURCE CODE: UR/0420/66/000/006/0124/0127

42

AUTHOR: Yegorshin, A. A.

ORG: None

TITLE: Calculation of shock waves in water

SOURCE: Samoletostroyeniye i tekhnika vozdushnogo flota, no. 6, 1966, 124-127

TOPIC TAGS: water, shock wave analysis, adiabatic process

ABSTRACT: The author considers calculations of shock waves in water which are applicable to problems of the hydraulic-hammer or sliding-piston type, assuming a final temperature in the shock wave of 40°C. An expression is derived for the Hugoniot adiabat in terms of the independent parameters p and T which gives a curve for water asymptotic to a vertical line at a density ratio of 1.3. This result shows that shock compression of water by a factor of more than 1.3 is impossible. The corresponding compression factor for air is 6. An approximate formula is derived for hydraulic hammer by simultaneous solution of the Hugoniot adiabat and the laws of conservation of mass, momentum and energy and it is shown that this expression reduces to the Zhukovskiy formula. A more accurate expression could be derived by using the nonlinear acoustic approximation, i. e. substitution of the Poisson adiabat for the Hugoniot adiabat, although calculations in this case would be just as complex. Orig. art. has: 3 figures, 17 formulas.

SUB CODE: 20/ SUBM DATE: None/ ORIG REF: 005/ OTH REF: 002

Card 1/1 BP

YEGORSHIN, N.A.; SHERSHEN', F.M.; SMIRNOV, A.N.; GORBUNOV, A.D.; YEGOROV, V.P.; VASIL'YEV, A.V.; KOLOMEYTSEV, K.N.; KOLEGOV, V.A.; KASATKINA, N.P., red.

[Mechanisms for lumbering camps; from work practices of the construction office of the Chusovskoye Logging Camp] Mekhanizmy dlia lesozagotovok; iz opyta raboty konstruktorskogo biuro, Chusovskogo lespromkhoza. Moskva, TSentr.nauchno-issl.in-t informatsii i tekhniko-ekon.issledovanii po lesnoi, tselliulozno-bumazhnoi, derevoobrabatyvaiushchei promyshl. i lesnomu khoz. 1963. 21 p. (MIRA 17:4)

YEGORSHIN,P., kandidat tekhnicheskikh nauk

Surface washing of rapid filters in the Gorkiy water supply system. Zhil. kom. khoz. 5 no.2:12-15 '55. (MLRA 8:6)
(Filters and filtration)

YEGORSHIN, P.I. (g.Gor'kiy).

Elements of practical application in the teaching in schools for the working youth. Mat.v shkole no.5:25-30 S-O '53. (MLRA 6:9)
(Mathematics--Study and teaching)

YEGORSHIN, P.I., kand.tekhn.nauk

Some results of investigating the surface cleaning of rapid water clarifying filters. Trudy GISI no.25:175-190 '56. (MIRA 11:5)
(Filters and filtration)

YEGORSHIN, P.I., dots.; GEL'FAND, S.A., prof., doktor fiz.-mat. nauk, otv. red.

[Some applications of the derivative; a textbook] Nekotorye prilozheniia proizvodnoi; uchebnoe posobie. Gor'kii, Gor'kovskii inzhenerno-stroit. in-t, 1962. 67 p. (MIRA 17:7)

YEGORSHIN, P.I.

Short analysis of methods for determining the distance to the point of complete blending of river and waste water. Trudy GISI no. 40:61-66 '61. (MIRA 17:7)

YEGORSHIN, S.I.

Graphic method for calculating the passage of floods through hydroelectric installations on rivers. Nauch.dokl.vys.shkoly; energ. no.4:11-22 '58. (MIRA 12:5)

1. Rekomendovana kafedroy gidrotekhnicheskikh sooruzheniy Moskovskogo energeticheskogo instituta im. Molotova.
(Floods--Graphic methods)
(Hydroelectric power stations)

AYVAZ'YAN, V.G., doktor tekhn.nauk, prof.; YEGORSHIN, S.I., inzh.

Increasing the effectiveness of debris-retaining installations of combined hydroelectric power stations. Gidr.stroi. 31 no.2:32-37 F '61. (MIRA 14:3)

(Hydroelectric power stations)

YEGORSHIN, V.P., prof.; GIL'MAN, Ye.A., red.; VOZNESENSKIY, A.D., tekhn.red.

[Theoretical mechanics; test assignments 1-4 for correspondence students in Course 2 with engineering majors in agricultural colleges] Teoreticheskaia mekhanika; kontrol'nye zadaniia 1-4 dlia studentov-zaochnikov II kursa inzhenernykh spetsial'nostei sel'skokhoziaistvennykh vuzov. [Version 7] Variant 7. Sostavil V.P.Egorshin. Moskva, 1958. 9 p. (MIRA 12:3)

1. Vsesoyuznyy sel'skokhozyaystvennyy institut zaochnogo obrazovaniya.
(Mechanics--Problems, exercises, etc.)

YEGORSHIN, V.P., prof.; GIL'MAN, Ye.A., red.; VOZNESENSKIY, A.D., tekhn.red.

[Theoretical mechanics; test assignments 1-4 for correspondence students in course 2 with engineering majors in agricultural colleges] Teoreticheskaia mekhanika; kontrol'nye zadaniia 1-4 dlia studentov-zaochnikov II kursa inzhenernykh spetsial'nostei sel'skokhoziaistvennykh vuzov. [Version 3.] Variant 3. Sostavil V.P.Egorshin. Moskva, 1958. 10 p. (MIRA 12:3)

1. Vsesoyuznyy sel'skokhozyaystvennyy institut zaochnogo obrazovaniya.
(Mechanics--Problems, exercises, etc.)

ACCESSION NR: AP4012360 S/0142/63/006/006/0639/0647

AUTHORS: Glady*shev, G. I.; Yegorshin, Yu. A.

TITLE: Accuracy of determination of the magnetic permeability and dielectric constant by the two-position method

SOURCE: IVUZ. Radiotekhnika, v. 6, no. 6, 1963, 639-647

TOPIC TAGS: magnetic permeability, permeability, dielectric constant, permittivity, permeability measurement, permittivity measurement, permeability measurement accuracy, permittivity measurement accuracy, transmission line measurement method, coaxial transmission line, waveguide transmission line

ABSTRACT: The accuracy with which the magnetic permeability and dielectric constant of the material are determined by means of a microwave line (the open-circuit and short-circuit method) is determined as functions of the errors in the determination of the input impedance, the characteristic resistance, and the propagation constants of the medium, with particular emphasis on the effect of random measurement errors. Formulas and plots are developed from which

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ACCESSION NR: AP4012360

to determine the errors in the determination of the propagation constant, the characteristic resistance, and the magnetic and dielectric constants. The effect of the geometrical configuration of the sample is discussed and a method is presented for first estimating the approximate values of the magnetic and dielectric parameters, from which it becomes possible to select the optimal thickness of the sample for the measurements. Both rectangular waveguides and coaxial microwave lines are considered. Expressions are also presented for the calculation of the extremal errors. Orig. art. has: 7 figures and 47 formulas.

ASSOCIATION: Institut radiotekhnicheskikh problem AN UkrSSR (Institute of Radio Problems, AN UkrSSR)

SUBMITTED: 14Apr62 DATE ACQ: 14Feb64 ENCL: 00

SUB CODE: GE NO REF SOV: 004 OTHER: 003

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ACCESSION NR: AP4017605 S/0109/64/009/002/0343/0346

AUTHOR: Yegorshin, Yu. A.

TITLE: Selecting a usable frequency band for a resonator partly filled with dielectric

SOURCE: Radiotekhnika i elektronika, v. 9, no. 2, 1964, 343-346

TOPIC TAGS: SHF resonator, SHF dielectric measurement, resonator usable frequency, resonator usable frequency band, resonator usable frequency measurement

ABSTRACT: The use of H_{0ln} modes in a circular-cylinder resonator may be accompanied by a wave interaction effect at the coincidence points which may result in an impairment of the accuracy of the measurements or in a collapse of the resonance. Formulas are developed for selecting such a frequency band for a resonator with and without a dielectric test specimen which would ensure the

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ACCESSION NR: AP4017605

absence of the coincidence points. A special case of coincidence of the H_{01n} mode with the E_{11n} mode is also considered; contactless plungers are recommended for empty resonators. Orig. art. has: 3 figures and 12 formulas.

ASSOCIATION: none

SUBMITTED: 25Feb63 DATE ACQ: 18Mar64 ENCL: 00

SUB CODE: GE NO REF SOV: 002 OTHER: 000

Card 2/2

GLADYSHEV, G.I.; YEGORSHIN, Yu.A.

Accuracy of the determination of permeability and specific inductive capacitance using the method of two places. Izv. vys. ucheb. zav.; radiotekh. 8 no.1:122-123 Ja-F '65.
(MIRA 18:5)

YEGORSHINA, L. A.; EBERTS, V. L.; SHEROVEROVA, L. P.; SAPOZHNIKOVA, L. V.

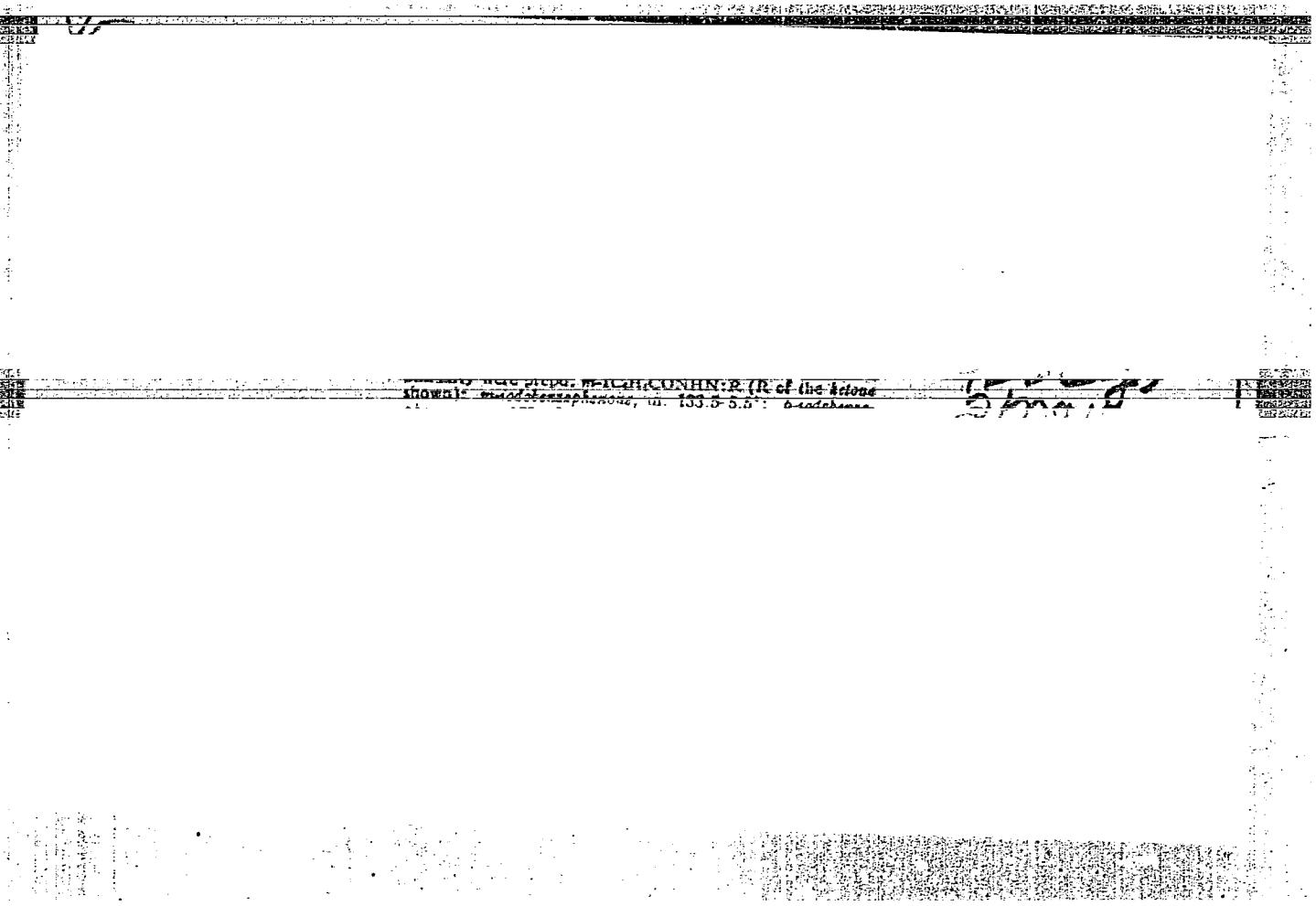
"Change With Age of the Immunological Reactivity in Children Suffering From Dysentery," Trudy 2-y Pavlovskoy Konferentsii Tomskogo Meditsinskogo Instituta, Tomsk, 1952, pp 215-217.

YEGORSHINA, L.A.

YAVORSKAYA, B.M.; OSIPOVA, G.I.; YEGORSHINA, L.A.

Epidemiological effectiveness of prophylactic action of phage in dysentery nidi. Zhur.mikrobiol.epid.i immun. no.2:69 F '54.
(MLRA 7:3)

1. Iz Tomskogo instituta vaktsin i syvorotok.
(Dysentery) (Bacteriophage)



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Tomsk. Nauchno-issledovatel'skiy institut vaktsin i syvorotok

Trudy, tom 11 (Transactions of the Tomsk Scientific Research Institute of Vaccines and Serums, Vol. 11) Tomsk, Izd-vo Tomskogo univ-ta, 1960. 327 p. 1,700 copies printed.

Editorial Board: B.G. Trukhmanov (Resp. Ed.) Director of the Tomsk Scientific Research Institute of Vaccines and Serums; S.P. Karpov (Deputy Ed.) Professor; Ye. I. Kleytman (Secretary); M.A. Mastenitsa; and V.M. Popov (Deceased); Tech. Ed.: A.T. Osvatskiy.

PURPOSE: This collection of articles is intended for biologists, physicians, and medical personnel.

COVERAGE: The collection contains 18 papers on problems of epidemiology and microbiology and 35 reports on the theory and practice of immunology. To avoid repetition of names of organizations in the table of contents the following affiliations will be abbreviated: Tomskiy nauchno-issledovatel'skiy institut vaktsin i syvorotok (Tomsk Scientific Research Institute of Vaccines and Serums) as "Tomsk Institute"; Tomskiy meditsinskiy institut as "Tomsk Medical Institute"; Kafedra mikrobiologii Tomskogo meditsinskogo instituta (Department of Microbiology of the Tomsk Medical Institute) as "Tomsk Department of Microbiology."

TRUKHMANOV, B.G.; YEGORSHINA, L.A.; ZEL'TINA, N.F.

Reactivity of the preparations against spring and summer tick-borne encephalitis. Trudy Tom NIIVS 11:255-260 '60.
(MIRA 16:2)

(ENCEPHALITIS) (IMMUNOCHEMISTRY)

TRUKHMANOV, B.G.; KLEYTMAN, Ye.I.; YEGORSHINA, L.A.

Possibility of using white rats for determining the quality of bacterial preparations. Trudy TomNIIVS 11:292-298 '60.
(MIRA 16:2)

(LABORATORY ANIMALS) (SERUM) (TOXINS AND ANTITOXINS)

37700

S/126/62/013/004/008/022
E193/E383

AUTHORS: Estulin, G.V., Yegorshina, T.V. and Burova, N.N.

TITLE: Constitution of oxide scales formed on niobium-base alloys

PERIODICAL: Fizika metallov i metallovedeniye, v. 13, no. 4, 1962, 550 - 554

TEXT: The oxidation-resistance of niobium can be considerably increased by alloying. The object of the present investigation was to study the structure and composition of scale formed at high temperatures on various niobium alloys and to obtain data which would provide an explanation of the beneficial effect of alloying and facilitate the rational choice of suitable alloying additions. To this end, specimens of pure Nb and NbCr, NbTi, NbV, NbMo, NbW and NbZr alloys were heated in air at 600 - 1 250 °C for periods ranging from 5 min to 20 hours. The outer layer of porous, friable oxide scale formed under these conditions was removed after each test, ground to powder and examined by X-ray diffraction. The

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Constitution of ....

constitution of the inner, tenacious oxide layer was determined by electron-diffraction. Several conclusions were reached. 1) Scale formed on Nb heated in air at 600 - 1 250 °C consisted of two allotropic forms (α and β) of Nb_2O_5, the α modification being stable at low temperatures. The α→β transition temperature depends on the holding time; the α modification is stable up to 900 °C for a holding time of 1 hour. 2) Scale formed on Nb-base alloys containing 5-7 wt.% Cr, Ti, V, Mo, W or Zr does not contain oxides other than Nb_2O_5. Different oxidation resistances of these alloys are due mainly to a change in the properties of Nb_2O_5, brought about by the presence of alloying additions in the alloy. 3) In the presence of alloying additions such as Cr, Ti, V and Mo, which lower the oxidation rate of Nb-base alloys, the α-Nb_2O_5 → β-Nb_2O_5 transformation temperature is shifted towards the lower temperatures. Small additions of Zr, which increase the oxidation rate, shift the α→β transformation

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temperature towards the higher values. Neither the rate of oxidation of Nb nor the $\alpha \rightarrow \beta$ transformation temperature are affected by small additions of W. The transition elements of the fourth period (Cr, Ti, V), when added to Nb, impart a higher degree of symmetry to the monoclinic structure of β-Nb_2O_5. Nb-base alloys containing more than 10% Cr form a scale which, in addition to Nb_2O_5, contains a complex oxide $CrNbO_4$; the formation of this oxide has no beneficial effect on the oxidation-resistance of the alloy. A decrease in the oxidation-resistance of the Nb-V alloys, observed when the Nb content reaches 7%, is due to the appearance of a second phase in the β-Nb_2O_5 scale; this phase becomes the mean constituent of scale formed on Nb-base alloys containing more than 10% V. There are 1 figure and 5 tables.

ASSOCIATION: Institut kachestvennykh staley TsNIIChM
(Institute of High-grade Steels of TsNIIChM)
SUBMITTED: May 4, 1961 (initially)
September 10, 1961 (after revision)

S/032/62/028/012/003/023
B124/B101

AUTHORS: Maslenkov, S. B., and Yegorshina, T. V.

TITLE: Application of microspectroscopic X-ray analysis in metallographic studies

PERIODICAL: Zavodskaya laboratoriya, v. 28, no. 12, 1962, 1443 - 1446

TEXT: A device developed by R. Castaign (Rech. Aéronaut. 23, 41 (1951); ONERA, 55, 1(1952)) was used for the microspectroscopic analysis. Castaign's microprobe was used to study the dendritic liquation of silicon in 55C2 (55S2) spring iron (3.5 tons) containing 1.66% silicon. The liquation degree is very high in the axial part where the dendrites are especially large; the ratio between maximum concentration in the interaxial region and minimum content in the axes is 2.0. When the steel is rolled, regions of low and high silicon concentrations appear in the form of thin bands which, after homogenized annealing for 12 hrs at 1200°C, at some places leave a broad, blurred band. Data obtained by X-ray spectrum analysis on the distribution of nickel in the diffusion layer resulting after 5-hr boration of metals and alloys at 900°C, were in good

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Application of microspectroscopic ...

agreement with the data calculated. Examination of ЭИ811 (EI811) steel heated to 1100°C showed redistribution to occur between the α-phase and γ-phase of 24.4 and 20.7% Cr and 4.47 and 6.85% Ni, respectively. The change in composition of the solid solution and phases separating on the ageing of alloys were investigated. ЭИ 726 (EI726) alloys were studied in the initial state and after 20.000-hr ageing at 700°C. In the initial state, only an excess phase (phase I) can be seen on the screen, whereas after ageing small and large bluish segregations (phase II) appear. In solid solutions, ageing causes a decrease in tungsten and niobium contents owing to the precipitation of an intermetallic phase with a high content of these elements (phase II). An Fe_2W-type lattice was determined by X-ray analysis. Phase I containing 71% Nb appears to be a niobium nitride or niobium carbonitride. Carbide contains no tungsten and does not change its composition even after long-time ageing; other carbide-forming elements are probably not contained in niobium carbide. In the Fe-Cr-Ni alloy type ЭИ 787 (EI787), primary carbides form a solid solution of titanium monocarbide and tungsten monocarbide (55% Ti and 20% W). The X-ray spectrum analysis showed that the cubic $Ni_3(Mo, Cr, W)_3C$ is deposited along the

Application of microspectroscopic ... S/032/62/028/012/003/023
B124/B101

grain boundary on ageing of complex alloys. There are 3 figures and 2 tables.

ASSOCIATION: Tsentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii im. I. P. Bardina (Central Scientific Research Institute of Ferrous Metallurgy imeni I. P. Bardin)

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MASLENKOV, S.B.; YEGORSHINA, T.V.

Using the X-ray spectroscopy for the study of metals in micro-volumes. Sbor. trud TSNIICHM no.35:154-163 '63. (MIRA 17:2)

MALINOCHKA, Ya.N.; MASLENKOV, S.B.; YEGORSHINA, T.V.

Investigating the microsegregation of silicon in cast iron with the help of an electron probe. Lit. proizv. no.1:22-25 Ja '63. (MIRA 16:3)

(Cast iron—Metallography)

MALINOCHKA, Ya.N. (Dnepropetrovsk); YEGORSHINA, T.V. (Dnepropetrovsk)

Mutual effect of silicon and phosphorus on their microsegregation in steel and cast iron. Izv. AN SSSR. Otd. tekh. nauk. Met. i gor. delo no.1:138-141 Ja-F '63. (MIRA 16:3)

(Steel—Metallography) (Cast iron—Metallography)

L 18050-63 EWP(q)/EWT(m)/BDS AFFTC/ASD Pad JD/HW/JG/WB
ACCESSION NR: AP3001691 S/0126/63/015/005/0658/0663

AUTHORS: Nazarov, Ye. G.; Yegorshina, T. V.

TITLE: Kinetics of acicular phase formation in EI787 alloy

SOURCE: Fizika metallov i metallovedeniye, v. 15, no. 5, 1963, 658-663

TOPIC TAGS: acicular phase, EI787 alloy kinetics

ABSTRACT: Changes of the metastable phases into the stable ones in alloy EI787 were investigated. This alloy has a Fe-Ni-Cr base, and hardens because of the metastable phase formation during the aging process. This γ'-phase is of the type $Ni_3(Ti, Al)$ and has a face-centered cubic lattice. Under certain conditions the γ'-phase is transformed into the stable γ''-phase which has an acicular structure, the same crystalline lattice, and a different chemical composition. The formation of these two phases at different temperatures and aging periods has been studied. The acicular phase appeared at 950C after 15-20 hours, at 900C after 75 hours, at 850C after 750 hours, and at 800C after 6 000 hours of aging. The chemical heterogeneity of the alloy speeds up the appearance of the γ''-phase. In a rolled sample it appeared at 950C after 10-16 hours. The cast samples showed small

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L 18050-63
ACCESSION NR: AP3001691

segregations of the acicular phase before they underwent aging. A 10-hour aging at 950C caused a pronounced appearance of the γ''-phase in all interaxial spaces of the thin section. The microstructures obtained are shown in photographs of the thin sections. Orig. art. has: 7 figures.

ASSOCIATION: TsNIIChERMET im. I. P. Bardina, Moskva (TsNIIChERMET Moscow)

SUBMITTED: 01Oct62 DATE ACQ: 11Jul63 ENCL: 00

SUB CODE: ML NO REF SOV: 012 OTHER: 005

Card 2/2

MALINOCHKA, Ya.N.; MASLENKOV, S.B.; YEGORSHINA, T.V.

Investigating the dendritic liquation of silicon in spring steel with the help of an electronic probe. Stal' 23 no.10:937-939 O '63. (MIRA 16:11)

1. Institut chernoy metallurgii v g. Dnepropetrovske i TSentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii.

ACCESSION NR: AP4012430 S/0129/64/000/002/0025/0028

AUTHORS: Zhurenkov, P.M.; Yegorshina, T.V.; Golikov, I.N.

TITLE: Dendritic segregation in 35KhGSA steel

SOURCE: Metalloved. i term. obrab. metallov, no. 2, 1964, 25-28

TOPIC TAGS: 35KhGSA steel, chromium, manganese, silicon, dendritic segregation, coring, microsegregation

ABSTRACT: The present work is devoted to determining the quantitative characteristics of coring chromium, manganese and silicon, using an electron microscope. In order to avoid the absorptive effect of characteristic rays and the secondary fluorescent emission in the specimen, a control sample, prepared from the same steel, was used for standardization purposes. Uniformity as to composition was attained by welding the ingot (diameter 150 mm.) to a bar (8 mm. diameter), by diffusion annealing at 1250C for 24 hrs., and subsequent normalizing at 860C. Results of some determinations of

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ACCESSION NR: AP4012430

chromium and manganese content in one control were compared with a calculation of content of these elements in pure metal, introducing a correction in fluorescent excitation of chromium and manganese atoms by iron atoms. Results of determining the content of components of alloys in dendrite areas by microanalysis are provided which indicate that there is not a substantial variation in degree of vertical coring in the ingot. With respect to the ingot cross section, the degree of coring is not constant. A great difference in the cooling rate of the investment and center zones of the ingot causes an increased degree of heterogeneous distribution of all components of the steel in approaching the ingot center. Chromium and manganese content at the axis of dendrites approach their average content in steel and change little in the ingot cross section. Silicon in the dendrite center is significantly depleted. This depletion increases in the axial zone of the ingot. A maximum degree of coring in the center zone of a 3.5 ton ingot of 35KhGSA steel is 1.90 for chromium, 1.85 for silicon and 1.75 for manganese. Tendency to coring was previously compared in certain elements of the

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ACCESSION NR: AP4012430

Pe-C-X ternary alloys (where X is the component) and in steel, alloyed with several elements in common. The order of decrease in degree of liquation in the series of elements Mo, Cr, Si, Mn, Ni from left to right in ternary alloys is maintained during joint alloying, although the amount of degree of coring changes. Orig. art. has: 4 figs. 1 table.

ASSOCIATION: TsNIIChM

SUBMITTED: 00	DATE ACQ: 03Mar64	ENCL: 00
SUB CODE: ML	NO REF SOV: 007	OTHER: 004

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